

What Is Claimed Is:

1. Apparatus for reducing mitral regurgitation,  
the apparatus comprising:

5 a bendable elongated body adapted to be inserted  
into the coronary sinus of a patient in the vicinity of  
the posterior leaflet of the mitral valve, the  
elongated body being adjustable between a first  
configuration adapted to be delivered into the coronary  
10 sinus and a second configuration adapted to exert a  
force onto the posterior annulus, the body comprising:

a distal end section having a plurality of  
proximally-extending barbs;

15 a proximal end section having a plurality of  
distally-extending barbs; and

at least one spring segment connecting said distal  
end section to said proximal end section, said at least  
one spring segment being adapted to apply a force to  
said distal end section and said proximal end section  
20 so as to urge said distal end section and said proximal  
end section together;

whereby when said elongated body is inserted into  
the coronary sinus in the first configuration, said at

least one spring segment will cause said elongated body to assume the second configuration so as to exert the force on the posterior annulus and thereby reduce mitral regurgitation.

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2. Apparatus according to claim 1 wherein the at least one spring segment comprises an elastic material, and further wherein said elastic material is stretched when said elongated body is in the first configuration and said elastic material is relaxed when said elongated body is in the second configuration.

3. Apparatus according to claim 1 wherein said at least one spring segment comprises a shape memory alloy, and further wherein a temperature transition is used to transform said elongated body from the first configuration to the second configuration.

4. Apparatus according to claim 1 wherein there are at least two spring segments connecting said distal end section to said proximal end section, and further wherein an intermediate section is disposed between said at least two spring segments.

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5. Apparatus according to claim 4 wherein said intermediate section has at least one barb thereon.

5 6. Apparatus for reducing mitral regurgitation, the apparatus comprising:

10 a variable elongated body adapted to be inserted into the coronary sinus of a patient in the vicinity of the posterior leaflet of the mitral valve, the variable elongated body being adjustable between a first configuration adapted to be delivered into the coronary sinus and a second configuration adapted to exert a force onto the posterior annulus, the variable elongated body comprising:

15 a first anchor comprising a first elongated section and a first anchor element disposed at one end thereof;

20 a second anchor having a second elongated section and a second anchor element disposed at one end thereof;

a crimp having an opening therein and being adapted to selectively close down the size of the opening;

said first anchor, said second anchor and said crimp being arranged so that said first elongated section and said second elongated section extend through said opening, with said first anchor element and said second anchor element being displaced from one another;

whereby said elongated body may be positioned in said first configuration wherein first anchor element and said second anchor element are displaced from one another by a first distance, said elongated body may be deployed in said coronary sinus, and said elongated body may thereafter be moved into said second configuration wherein said first anchor and said second anchor are displaced from one another by a second, shorter distance, whereby to exert the force on the posterior annulus and thereby reduce mitral regurgitation.

7. Apparatus according to claim 6 wherein said first anchor element comprises a first hook at one end of said first elongated section.

8. Apparatus according to claim 6 wherein said second anchor element comprises a second hook at one end of said first elongated section.

5 9. Apparatus according to claim 6 wherein said crimp is made of elastic material.

10. Apparatus according to claim 9 wherein at least one of said anchors comprises a saw-toothed surface for engaging the other of said anchors.

11. Apparatus according to claim 6 wherein said crimp is made of a material which will take a set.

12. A method for reducing mitral regurgitation, the method comprising the steps of:

providing a prosthesis comprising:

a bendable elongated body adapted to be inserted into the coronary sinus of a patient in the vicinity of the posterior leaflet of the mitral valve, the elongated body being adjustable between a first configuration adapted to be delivered into the coronary

sinus and a second configuration adapted to exert a force onto the posterior annulus, the body comprising:

a distal end section having a plurality of proximally-extending barbs;

5 a proximal end section having a plurality of distally-extending barbs; and

at least one spring segment connecting said distal end section to said proximal end section, said at least one spring segment being adapted to apply a force to said distal end section and said proximal end section so as to urge said distal end section and said proximal end section together;

whereby when said elongated body is inserted into the coronary sinus in the first configuration, said at least one spring segment will cause said elongated body to assume the second configuration so as to exert the force on the posterior annulus and thereby reduce mitral regurgitation;

positioning the prosthesis in the coronary sinus while in the first configuration; and

reconfiguring the prosthesis into the second configuration.

13. A method for reducing mitral regurgitation,  
the method comprising the steps of:

providing a prosthesis comprising:

5 a variable elongated body adapted to be inserted  
into the coronary sinus of a patient in the vicinity of  
the posterior leaflet of the mitral valve, the variable  
elongated body being adjustable between a first  
configuration adapted to be delivered into the coronary  
10 sinus and a second configuration adapted to exert a  
force onto the posterior annulus, the variable  
elongated body comprising:

20 a first anchor comprising a first elongated  
section and a first anchor element disposed at one end  
thereof;

a second anchor having a second elongated section  
and a second anchor element disposed at one end  
thereof;

20 a crimp having an opening therein and being  
adapted to selectively close down the size of the  
opening;

said first anchor, said second anchor and said  
crimp being arranged so that said first elongated

section and said second elongated section extend through said opening, with said first anchor element and said second anchor element being displaced from one another;

5           whereby said elongated body may be positioned in said first configuration wherein first anchor element and said second anchor element are displaced from one another by a first distance, said elongated body may be deployed in said coronary sinus, and said elongated  
10           body may thereafter be moved into said second configuration wherein said first anchor and said second anchor are displaced from one another by a second, shorter distance, whereby to exert the force on the posterior annulus and thereby reduce mitral  
15           regurgitation;

          positioning the prosthesis in the coronary sinus while in the first configuration; and

          reconfiguring the prosthesis into the second configuration.

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